

## Substrate Verification Compilation Summary

**Introduction and Purpose.** The first purpose of the substrate sampling was to demonstrate that PCBs have not migrated from the dried applied paint into the substrate surfaces. The second purpose was to establish that when the paint is removed, such that it meets the Visual Clearance Standard, the surface has in fact been adequately remediated. Substrate sampling on all types of substrates (including brick, mortar, concrete and sandstone) proves that the Visual Clearance method is a reliable means to confirm that the required work is complete. Accordingly, the substrate sampling requirement should now be removed from future phase IPWP requirements.

**Re-packaged Compilation Requested.** As requested by the EPA on February 22, 2019, all previously submitted Phase I substrate sampling information is here compiled. The purpose is to assist EPA in its determination that all work required for Phase I is complete. In addition, determine that the visual performance standard, already approved for brick and mortar, is a reliable means to verify the required removal of PCB containing paint from all concrete and sandstone substrates, for future phases of work.

**Approved Sampling Plan and Methodology.** The substrate verification sampling methodology is set forth in the Individual Phased Work Plan (IPWP) for Phase I, at Exhibit 11. The sampling plan, entitled *Sampling Plan for the Verification of Concrete Substrate Once Visual Clearance Standard Met*, was developed by Rainier Commons' independent testing laboratory – NVL Labs – on April 2, 2014 and subsequently approved for use by the EPA as part of the IPWP Phase I Approval, dated June 17, 2014. The approved sampling plan provided the basis for all subsequent actions and activities including sampling locations (see photos in sampling plan), sampling methodology, chain of custody, analysis, and QA/QC information. (Approved Sampling Plan Reproduced here as Attachment 1).

**Substrate Sampling Report, Exhibit 2 to July 10, 2015, Phase I Close Out Report.** Much of the content in this compilation was originally submitted to the EPA as Exhibit 2 to the Individual Phased Work Plan (IPWP) Phase I Close-Out report dated July 10, 2015. The Exhibit 2 report contains two tables. One for Pre-Clearance or preliminary sampling data for samples collected August 4, 2014, September 29, 2014, and October 9, 2014. The Pre-clearance samples were collected after blasting work, but before all hand grinding finish work was performed. These pre-clearance sample results were reported for information purposes only as Rainier Commons has been providing all sampling data to EPA.

More importantly, the July 10, 2015 report contains a second table showing the required Post-Clearance Compliance sampling data for samples collected on December 12, 2014 and January 30, 2015. These samples were collected consistent with the approved Sampling Plan (Attachment 1). The text of the report states that the samples were collected pursuant to the approved sampling plan. Again, sampling locations were identified in the approved Sampling Plan and were referenced with location descriptions such as Building 13 West Elevation, in the verification Sampling Report.

The two tables in the substrate verification sampling report (pre-clearance and post-clearance) summarized all pertinent sample data. The tables show a listing of the sample collection date, sample ID number, sampling location, substrate type, and sample results in parts per million ("ppm"). The report also contains full laboratory reports with supporting data. (Attachment 2 hereto is a reproduction of

Exhibit 2 to the July 10, 2015 Close-Out Report). Photographs are also included as Attachment 2A, for ease of reference, as requested.

**Schematic Diagrams With Sample Results Reproduced.** As a supplement to the substrate reports already provided we attach schematic diagrams (Attachment 2B). The diagrams at Attachment 2B display the sample collection locations with the individual sample identification numbers listed in the laboratory reports and include the laboratory result for each sample. These diagrams provide an additional depiction of information previously provided in the sampling plan and sampling reports.

**QA/QC for Laboratory Reports:** Laboratory reports were provided with the July 10, 2015 Close-out Report (see attachment 2). Attachment 2C contains the balance of the QA/QC for the laboratory reports.

**Response to EPA's Close Out Report Comments and Questions.** After EPA's completion of the Phase I Close-Out Report review and preliminary approval of the Phase I Work, on July 13, 2018 the EPA provided a list of additional comments and questions regarding the IPWP-I Close-Out report. Question 2 asked about the availability of a post-clearance sample for Building 10-West (Building 10 and 11 have different building numbers on the Rainier Commons campus map, but they are connected). After determining that a companion sample for the Building 10 portion of the Building 10/11 west façade had not been collected, Rainier Commons collected an additional sample from the Building 10-West location, July 17, 2018. Laboratory analysis of this sample confirmed a Non-Detect result. No PCBs are present above the Reporting Limit of 0.98 PPM. The results were reported to the EPA on September 28, 2018. This report included a full laboratory package as well as location, substrate type, and photographs, documented in field notes. (Attachment 3).

**Review of Substrate Sampling Results.** During the process of responding to the EPA's request for additional information (EPA comments and questions July 13, 2018) a further review of all post-clearance sampling was conducted. Of the seven Phase I post-clearance substrate samples collected, five samples were Non-Detect for PCBs. Two samples contained detectable levels, but were just over 1 ppm. These results demonstrate that PCBs did not migrate into the underlying substrates, clearing concrete and sandstone in addition to brick and mortar.

**Additional Verification Samples.** Two additional substrate samples were collected September 27, 2018 at locations immediately adjacent to the two previous post-clearance sample locations with the results just over 1 ppm. *EPA Standard Operating Procedure of Sampling Porous Surfaces for Polychlorinated Biphenyls (PCBs)*, Section 9.1.1. was followed. Laboratory results for these tests indicated Non-Detect for PCBs. These results were reported to the EPA on October 9, 2018. This report included a full laboratory package as well as location, substrate type, photographs, and field notes. (Attachment 4 hereto).

**Compilation Table.** The compilation table (Attachment 5 hereto) combines the information previously reported in the two separate tables in the July 10, 2015 Close-Out Report (Ex. 2 thereto) with the additional follow-up substrate testing results reported to EPA on September 28, 2018 and October 9, 2018. These sample results demonstrate the success of the Phase I work. No further work or controls

are needed. It further demonstrates that substrate testing can be removed from future phased work for concrete and sandstone substrates, the same as brick and mortar.